west virginia department of environmental protection

Division of Air Quality
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Charleston, WV 25304-2345
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Jim Justice, Governor
Austin Caperton, Cabinet Secretary
www.dep.wv.gov

June 7, 2017

Paul Hunter
Williams Ohio Valley Midstream LLC (OVM)
100 Teletech Drive, Suite 2
Moundsville, WV 26041

Re: Carmichael Compressor Station
Permit No. R13-3086B
Plant ID No. 051-00168

Dear Mr. Hunter:

Your application for a permit as required by Section 5 of 45CSR13 - "Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Temporary Permit, General Permit, and Procedures for Evaluation" has been approved. The enclosed permit R13-3086B is hereby issued pursuant to Subsection 5.7 of 45CSR13. Please be aware of the notification requirements in the permit which pertain to commencement of construction, modification, or relocation activities; startup of operations; and suspension of operations.

The source is not subject to 45CSR30.

In accordance with 45CSR22 - Air Quality Management Fee Program, the permittee shall not operate nor cause to operate the permitted facility or other associated facilities on the same or contiguous sites comprising the plant without first obtaining and having in current effect a Certificate to Operate (CTO). Such Certificate to Operate (CTO) shall be renewed annually, shall be maintained on the premises for which the Certificate has been issued, and shall be made immediately available for inspection by the Secretary or his/her duly authorized representative.

Any person whose interest may be affected, including, but not necessarily limited to, the applicant and any person who participated in the public comment process, by a permit issued, modified or denied by the Secretary may appeal such action of the Secretary to the Air Quality Board pursuant to article one [§§22B-1-1 et seq.], Chapter 22B of the Code of West Virginia. West Virginia Code §§22-5-14.

Should you have any questions or comments, please contact me at (304) 926-0499, extension 1211.

Sincerely,

William T. Rothwell II, P.E.
Engineer

Enclosure

West Virginia Department of Environmental Protection
Division of Air Quality

Jim Justice
Governor

Austin Caperton
Cabinet Secretary

Class I Administrative Update

R13-3086B

This permit is issued in accordance with the West Virginia Air Pollution Control Act (West Virginia Code §§ 22-5-1 et seq.) and 45 C.S.R. 13 — Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Temporary Permits, General Permits and Procedures for Evaluation. The permittee identified at the facility listed below is authorized to construct the stationary sources of air pollutants identified herein in accordance with all terms and conditions of this permit.

Issued to:

Williams Ohio Valley Midstream LLC
Carmichael Compressor Station
051-00168

William F. Durham
Director

Issued: June 7, 2017

This permit replaces and supercedes R13-3086A.

Facility Location:	Near Moundsville, Marshall County, West Virginia
Mailing Address:	100 Teletech Drive, Suite 2, Moundsville, WV 26041
Facility Description:	Compressor Station
NAICS Codes:	213112
UTM Coordinates:	536.142 km Easting • 4,415.700 km Northing • Zone 17
Latitude/Longitude:	39.8906/-80.5773
Permit Type:	Modification
Desc. of Change:	Update to allow the flexibility of having up to two glycol pumps (one pump solely used as a backup) hooked up at their dehydration sites (only one pump will be allowed to operate at a time) at a natural gas compressor station.

Any person whose interest may be affected, including, but not necessarily limited to, the applicant and any person who participated in the public comment process, by a permit issued, modified or denied by the Secretary may appeal such action of the Secretary to the Air Quality Board pursuant to article one [§§ 22B-1-1 et seq.], Chapter 22B of the Code of West Virginia. West Virginia Code §22-5-14.

The source is not subject to 45CSR30.

Table of Contents

1.0. Emission Units **3**

2.0. General Conditions 4
- 2.1. Definitions 4
- 2.2. Acronyms 4
- 2.3. Authority 5
- 2.4. Term and Renewal 5
- 2.5. Duty to Comply 5
- 2.6. Duty to Provide Information 5
- 2.7. Duty to Supplement and Correct Information 6
- 2.8. Administrative Permit Update 6
- 2.9. Permit Modification 6
- 2.10. Major Permit Modification 6
- 2.11. Inspection and Entry 6
- 2.12. Emergency 6
- 2.13. Need to Halt or Reduce Activity Not a Defense 7
- 2.14. Suspension of Activities 7
- 2.15. Property Rights 7
- 2.16. Severability 8
- 2.17. Transferability 8
- 2.18. Notification Requirements 8
- 2.19. Credible Evidence 8

3.0. Facility-Wide Requirements **9**
- 3.1. Limitations and Standards 9
- 3.2. Monitoring Requirements 9
- 3.3. Testing Requirements 10
- 3.4. Recordkeeping Requirements 11
- 3.5. Reporting Requirements 11

4.0. Source-Specific Requirements **13**
- 4.1. Limitations and Standards 13
- 4.2. Monitoring Requirements 17
- 4.3. Testing Requirements 19
- 4.4. Recordkeeping Requirements 19

CERTIFICATION OF DATA ACCURACY **22**

1.0 Emission Units

Emission Unit ID	Emission Point ID[1]	Emission Unit Description	Year Installed	Design Capacity	Control Device
CE-01	1E	Caterpillar G3306TA 4-Stroke Rich Burn (4SRB) Compressor Engine	2013	203 hp	None
RSV-1	2E, 3E[1]	Dehydrator Still Column	2013	5.0 mmscf/day	None
		Dehydrator Flash Tank	2013		None[2]
RBV-1	2E	Dehydrator Reboiler	2013	0.2 mmBtu/hr	None
T01	4E	Produced Water Storage Tank	2013	8,820 gallons	None
TLO	5E[3]	Truck Loadout	2013	106,000 gal/yr	None

(1) A minimum of 50% of emissions from Flash Tank emissions are sent to the reboiler as fuel (2E), the remaining gases are vented directly to the atmosphere (not given an emission point in the application).
(2) A minimum of 50% of emissions from Dehydrator Flash Tank are sent to the Reboiler as a fuel.
(3) Emissions are fugitive in nature.

2.0. General Conditions

2.1. Definitions

2.1.1. All references to the "West Virginia Air Pollution Control Act" or the "Air Pollution Control Act" mean those provisions contained in W.Va. Code §§ 22-5-1 to 22-5-18.

2.1.2. The "Clean Air Act" means those provisions contained in 42 U.S.C. §§ 7401 to 7671q, and regulations promulgated thereunder.

2.1.3. "Secretary" means the Secretary of the Department of Environmental Protection or such other person to whom the Secretary has delegated authority or duties pursuant to W.Va. Code §§ 22-1-6 or 22-1-8 (45 CSR § 30-2.12.). The Director of the Division of Air Quality is the Secretary's designated representative for the purposes of this permit.

2.2. Acronyms

CAAA	Clean Air Act Amendments
CBI	Confidential Business Information
CEM	Continuous Emission Monitor
CES	Certified Emission Statement
C.F.R. *or* CFR	Code of Federal Regulations
CO	Carbon Monoxide
C.S.R. *or* CSR	Codes of State Rules
DAQ	Division of Air Quality
DEP	Department of Environmental Protection
dscm	Dry Standard Cubic Meter
FOIA	Freedom of Information Act
HAP	Hazardous Air Pollutant
HON	Hazardous Organic NESHAP
HP	Horsepower
lbs/hr	Pounds per Hour
LDAR	Leak Detection and Repair
M	Thousand
MACT	Maximum Achievable Control Technology
MDHI	Maximum Design Heat Input
MM	Million
MMBtu/hr *or* mmbtu/hr	Million British Thermal Units per Hour
MMCF/hr *or* mmcf/hr	Million Cubic Feet per Hour
NA	Not Applicable
NAAQS	National Ambient Air Quality Standards
NESHAPS	National Emissions Standards for Hazardous Air Pollutants
NO_x	Nitrogen Oxides
NSPS	New Source Performance Standards
PM	Particulate Matter
$PM_{2.5}$	Particulate Matter less than 2.5μm in diameter
PM_{10}	Particulate Matter less than 10μm in diameter
Ppb	Pounds per Batch
pph	Pounds per Hour
ppm	Parts per Million
Ppmv or ppmv	Parts per million by volume
PSD	Prevention of Significant Deterioration
psi	Pounds per Square Inch
SIC	Standard Industrial Classification
SIP	State Implementation Plan
SO_2	Sulfur Dioxide
TAP	Toxic Air Pollutant
TPY	Tons per Year
TRS	Total Reduced Sulfur
TSP	Total Suspended Particulate
USEPA	United States Environmental Protection Agency
UTM	Universal Transverse Mercator
VEE	Visual Emissions Evaluation
VOC	Volatile Organic Compounds
VOL	Volatile Organic Liquids

2.3. Authority

This permit is issued in accordance with West Virginia Air Pollution Control Law W.Va. Code §§22-5-1 et seq. and the following Legislative Rules promulgated thereunder:

2.3.1. 45CSR13 – *Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Temporary Permits, General Permits and Procedures for Evaluation.*

2.4. Term and Renewal

2.4.1. This permit shall remain valid, continuous and in effect unless it is revised, suspended, revoked or otherwise changed under an applicable provision of 45CSR13 or any applicable legislative rule.

2.5. Duty to Comply

2.5.1. The permitted facility shall be constructed and operated in accordance with the plans and specifications filed in Permit Application R13-3086, R13-3086A, and any modifications, administrative updates, or amendments thereto. The Secretary may suspend or revoke a permit if the plans and specifications upon which the approval was based are not adhered to; **[45CSR§§13-5.11 and 13-10.3]**

2.5.2. This permit replaces and supercedes R13-3086. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the West Virginia Code and the Clean Air Act and is grounds for enforcement action by the Secretary or USEPA;

2.5.3. Violations of any of the conditions contained in this permit, or incorporated herein by reference, may subject the permittee to civil and/or criminal penalties for each violation and further action or remedies as provided by West Virginia Code 22-5-6 and 22-5-7;

2.5.4. Approval of this permit does not relieve the permittee herein of the responsibility to apply for and obtain all other permits, licenses and/or approvals from other agencies; i.e., local, state and federal, which may have jurisdiction over the construction and/or operation of the source(s) and/or facility herein permitted.

2.6. Duty to Provide Information

The permittee shall furnish to the Secretary within a reasonable time any information the Secretary may request in writing to determine whether cause exists for administratively updating, modifying, revoking or terminating the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the Secretary copies of records to be kept by the permittee. For information claimed to be confidential, the permittee shall furnish such records to the Secretary along with a claim of confidentiality in accordance with 45CSR31. If confidential information is to be sent to USEPA, the permittee shall directly provide such information to USEPA along with a claim of confidentiality in accordance with 40 C.F.R. Part 2.

2.7. Duty to Supplement and Correct Information

Upon becoming aware of a failure to submit any relevant facts or a submittal of incorrect information in any permit application, the permittee shall promptly submit to the Secretary such supplemental facts or corrected information.

2.8. Administrative Update

The permittee may request an administrative update to this permit as defined in and according to the procedures specified in 45CSR13.
[45CSR§13-4]

2.9. Permit Modification

The permittee may request a minor modification to this permit as defined in and according to the procedures specified in 45CSR13.
[45CSR§13-5.4.]

2.10. Major Permit Modification

The permittee may request a major modification as defined in and according to the procedures specified in 45CSR14 or 45CSR19, as appropriate.
[45CSR§13-5.1]

2.11. Inspection and Entry

The permittee shall allow any authorized representative of the Secretary, upon the presentation of credentials and other documents as may be required by law, to perform the following:

a. At all reasonable times (including all times in which the facility is in operation) enter upon the permittee's premises where a source is located or emissions related activity is conducted, or where records must be kept under the conditions of this permit;

b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

c. Inspect at reasonable times (including all times in which the facility is in operation) any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit;

d. Sample or monitor at reasonable times substances or parameters to determine compliance with the permit or applicable requirements or ascertain the amounts and types of air pollutants discharged.

2.12. Emergency

2.12.1. An "emergency" means any situation arising from sudden and reasonable unforeseeable events beyond the control of the source, including acts of God, which situation requires immediate corrective action to restore normal operation, and that causes the source to exceed a technology-based emission

limitation under the permit, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.

2.12.2. Effect of any emergency. An emergency constitutes an affirmative defense to an action brought for noncompliance with such technology-based emission limitations if the conditions of Section 2.12.3 are not met.

2.12.3. The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that:

a. An emergency occurred and that the permittee can identify the cause(s) of the emergency;

b. The permitted facility was at the time being properly operated;

c. During the period of the emergency the permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards, or other requirements in the permit; and,

d. The permittee submitted notice of the emergency to the Secretary within one (1) working day of the time when emission limitations were exceeded due to the emergency and made a request for variance, and as applicable rules provide. This notice must contain a detailed description of the emergency, any steps taken to mitigate emission, and corrective actions taken.

2.12.4. In any enforcement proceeding, the permittee seeking to establish the occurrence of an emergency has the burden of proof.

2.12.5. The provisions of this section are in addition to any emergency or upset provision contained in any applicable requirement.

2.13. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a permittee in an enforcement action that it should have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. However, nothing in this paragraph shall be construed as precluding consideration of a need to halt or reduce activity as a mitigating factor in determining penalties for noncompliance if the health, safety, or environmental impacts of halting or reducing operations would be more serious than the impacts of continued operations.

2.14. Suspension of Activities

In the event the permittee should deem it necessary to suspend, for a period in excess of sixty (60) consecutive calendar days, the operations authorized by this permit, the permittee shall notify the Secretary, in writing, within two (2) calendar weeks of the passing of the sixtieth (60) day of the suspension period.

2.15. Property Rights

This permit does not convey any property rights of any sort or any exclusive privilege.

2.16. Severability

The provisions of this permit are severable and should any provision(s) be declared by a court of competent jurisdiction to be invalid or unenforceable, all other provisions shall remain in full force and effect.

2.17. Transferability

This permit is transferable in accordance with the requirements outlined in Section 10.1 of 45CSR13. **[45CSR§13-10.1]**

2.18. Notification Requirements

The permittee shall notify the Secretary, in writing, no later than thirty (30) calendar days after the actual startup of the operations authorized under this permit.

2.19. Credible Evidence

Nothing in this permit shall alter or affect the ability of any person to establish compliance with, or a violation of, any applicable requirement through the use of credible evidence to the extent authorized by law. Nothing in this permit shall be construed to waive any defense otherwise available to the permittee including, but not limited to, any challenge to the credible evidence rule in the context of any future proceeding.

3.0. Facility-Wide Requirements

3.1. Limitations and Standards

3.1.1. **Open burning.** The open burning of refuse by any person, firm, corporation, association or public agency is prohibited except as noted in 45CSR§6-3.1.
[45CSR§6-3.1.]

3.1.2. **Open burning exemptions.** The exemptions listed in 45CSR§6-3.1 are subject to the following stipulation: Upon notification by the Secretary, no person shall cause, suffer, allow or permit any form of open burning during existing or predicted periods of atmospheric stagnation. Notification shall be made by such means as the Secretary may deem necessary and feasible.
[45CSR§6-3.2.]

3.1.3. **Asbestos.** The permittee is responsible for thoroughly inspecting the facility, or part of the facility, prior to commencement of demolition or renovation for the presence of asbestos and complying with 40 C.F.R. § 61.145, 40 C.F.R. § 61.148, and 40 C.F.R. § 61.150. The permittee, owner, or operator must notify the Secretary at least ten (10) working days prior to the commencement of any asbestos removal on the forms prescribed by the Secretary if the permittee is subject to the notification requirements of 40 C.F.R. § 61.145(b)(3)(i). The USEPA, the Division of Waste Management and the Bureau for Public Health - Environmental Health require a copy of this notice to be sent to them.
[40CFR§61.145(b) and 45CSR§34]

3.1.4. **Odor.** No person shall cause, suffer, allow or permit the discharge of air pollutants which cause or contribute to an objectionable odor at any location occupied by the public.
[45CSR§4-3.1 State-Enforceable only.]

3.1.5. **Permanent shutdown.** A source which has not operated at least 500 hours in one 12-month period within the previous five (5) year time period may be considered permanently shutdown, unless such source can provide to the Secretary, with reasonable specificity, information to the contrary. All permits may be modified or revoked and/or reapplication or application for new permits may be required for any source determined to be permanently shutdown.
[45CSR§13-10.5.]

3.1.6. **Standby plan for reducing emissions.** When requested by the Secretary, the permittee shall prepare standby plans for reducing the emissions of air pollutants in accordance with the objectives set forth in Tables I, II, and III of 45 C.S.R. 11.
[45CSR§11-5.2.]

3.2. Monitoring Requirements

3.2.1. **Emission Limit Averaging Time.** Unless otherwise specified, compliance with all annual limits shall be based on a rolling twelve month total. A rolling twelve month total shall be the sum of the measured parameter of the previous twelve calendar months. Compliance with all hourly emission limits shall be based on the applicable NAAQS averaging times or, where applicable, as given in any approved performance test method.

3.3. Testing Requirements

3.3.1. **Stack testing.** As per provisions set forth in this permit or as otherwise required by the Secretary, in accordance with the West Virginia Code, underlying regulations, permits and orders, the permittee shall conduct test(s) to determine compliance with the emission limitations set forth in this permit and/or established or set forth in underlying documents. The Secretary, or his duly authorized representative, may at his option witness or conduct such test(s). Should the Secretary exercise his option to conduct such test(s), the operator shall provide all necessary sampling connections and sampling ports to be located in such manner as the Secretary may require, power for test equipment and the required safety equipment, such as scaffolding, railings and ladders, to comply with generally accepted good safety practices. Such tests shall be conducted in accordance with the methods and procedures set forth in this permit or as otherwise approved or specified by the Secretary in accordance with the following:

a. The Secretary may on a source-specific basis approve or specify additional testing or alternative testing to the test methods specified in the permit for demonstrating compliance with 40 C.F.R. Parts 60, 61, and 63 in accordance with the Secretary's delegated authority and any established equivalency determination methods which are applicable. If a testing method is specified or approved which effectively replaces a test method specified in the permit, the permit may be revised in accordance with 45CSR§13-4 or 45CSR§13-5.4 as applicable.

b. The Secretary may on a source-specific basis approve or specify additional testing or alternative testing to the test methods specified in the permit for demonstrating compliance with applicable requirements which do not involve federal delegation. In specifying or approving such alternative testing to the test methods, the Secretary, to the extent possible, shall utilize the same equivalency criteria as would be used in approving such changes under Section 3.3.1.a. of this permit. If a testing method is specified or approved which effectively replaces a test method specified in the permit, the permit may be revised in accordance with 45CSR§13-4 or 45CSR§13-5.4 as applicable.

c. All periodic tests to determine mass emission limits from or air pollutant concentrations in discharge stacks and such other tests as specified in this permit shall be conducted in accordance with an approved test protocol. Unless previously approved, such protocols shall be submitted to the Secretary in writing at least thirty (30) days prior to any testing and shall contain the information set forth by the Secretary. In addition, the permittee shall notify the Secretary at least fifteen (15) days prior to any testing so the Secretary may have the opportunity to observe such tests. This notification shall include the actual date and time during which the test will be conducted and, if appropriate, verification that the tests will fully conform to a referenced protocol previously approved by the Secretary.

d. The permittee shall submit a report of the results of the stack test within sixty (60) days of completion of the test. The test report shall provide the information necessary to document the objectives of the test and to determine whether proper procedures were used to accomplish these objectives. The report shall include the following: the certification described in paragraph 3.5.1.; a statement of compliance status, also signed by a responsible official; and, a summary of conditions which form the basis for the compliance status evaluation. The summary of conditions shall include the following:

1. The permit or rule evaluated, with the citation number and language;
2. The result of the test for each permit or rule condition; and,
3. A statement of compliance or noncompliance with each permit or rule condition.

[WV Code § 22-5-4(a)(14-15) and 45CSR13]

3.4. Recordkeeping Requirements

3.4.1. **Retention of records.** The permittee shall maintain records of all information (including monitoring data, support information, reports and notifications) required by this permit recorded in a form suitable and readily available for expeditious inspection and review. Support information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation. The files shall be maintained for at least five (5) years following the date of each occurrence, measurement, maintenance, corrective action, report, or record and, when requested by the Director, must be accessible within a reasonable time. Where appropriate, the permittee may maintain records electronically (on a computer, on computer floppy disks, CDs, DVDs, or magnetic tape disks), on microfilm, or on microfiche.

3.4.2. **Odors.** For the purposes of 45CSR4, the permittee shall maintain a record of all odor complaints received, any investigation performed in response to such a complaint, and any responsive action(s) taken.
[45CSR§4. *State-Enforceable only.*]

3.5. Reporting Requirements

3.5.1. **Responsible official.** Any application form, report, or compliance certification required by this permit to be submitted to the DAQ and/or USEPA shall contain a certification by the responsible official that states that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate and complete.

3.5.2. **Confidential information.** A permittee may request confidential treatment for the submission of reporting required by this permit pursuant to the limitations and procedures of W.Va. Code § 22-5-10 and 45CSR31.

3.5.3. **Correspondence.** All notices, requests, demands, submissions and other communications required or permitted to be made to the Secretary of DEP and/or USEPA shall be made in writing and shall be deemed to have been duly given when delivered by hand, or mailed first class with postage prepaid to the address(es) set forth below or to such other person or address as the Secretary of the Department of Environmental Protection may designate:

If to the DAQ:

Director
WVDEP
Division of Air Quality
601 57th Street, SE
Charleston, WV 25304-2345

If to the USEPA:

Associate Director
Office of Air Enforcement and Compliance
Assistance Review (3AP20)
U. S. Environmental Protection Agency
Region III
1650 Arch Street
Philadelphia, PA 19103-2029

3.5.4. **Operating Fee.**

3.5.4.1. In accordance with 45CSR22 – Air Quality Management Fee Program, the permittee shall not operate nor cause to operate the permitted facility or other associated facilities on the same or contiguous sites comprising the plant without first obtaining and having in current effect a Certificate to Operate (CTO). Such Certificate to Operate (CTO) shall be renewed annually, shall be maintained on the premises for which the certificate has been issued, and shall be made immediately available for inspection by the Secretary or his/her duly authorized representative.

3.5.5. **Emission inventory.** At such time(s) as the Secretary may designate, the permittee herein shall prepare and submit an emission inventory for the previous year, addressing the emissions from the facility and/or process(es) authorized herein, in accordance with the emission inventory submittal requirements of the Division of Air Quality. After the initial submittal, the Secretary may, based upon the type and quantity of the pollutants emitted, establish a frequency other than on an annual basis.

4.0. Source-Specific Requirements

4.1. Limitations and Standards

4.1.1. Only those emission units/sources as identified in Table 1.0, with the exception of any *de minimis* sources as identified under Table 45-13B of 45CSR13, are authorized at the permitted facility. In accordance with the information filed in Permit Application R13-3086 and R13-3086A, the emission units/sources identified under Table 1.0 of this permit shall be installed, maintained, and operated so as to minimize any fugitive escape of pollutants, shall not exceed the listed maximum design capacities, shall use the specified control devices, and comply with any other information provided under Table 1.0.

4.1.2. The compressor engine, identified as CE-01, shall meet the following requirements:

a. The unit shall be a Caterpillar G3306TA 4SRB 203 hp compressor engine and shall only be fired by natural gas;

b. At all times the engine is in operation a Miratech RCS-1816-06 catalytic converter (or another model with verifiably equivalent or greater control percentages) shall be used for emissions control;

c. The maximum emissions from the engine shall not exceed the limits given in the following table:

Table 4.1.2(c): Compressor Engine Emission Limits

Pollutant	PPH(1)	TPY
CO	0.89	3.90
NO_x	0.44	1.95
$PM_{2.5}/PM_{10}/PM$(2)	0.04	0.16
VOC	0.17	0.73
Formaldehyde	0.11	0.49

(1) PPH emissions based on specific model of engine and engine size.
(2) Includes condensables.

d. As the annual emissions are based on 8,760 hours of operation, there is no annual limit on hours of operation or natural gas combusted on an annual basis;

e. *[Reserved]*

f. *[Reserved]*

g. **40 CFR 63, Subpart ZZZZ**
If you own or operate an existing stationary RICE located at an area source of HAP emissions, you must comply with the requirements in Table 2d to this subpart and the operating limitations in Table 2b to this subpart that apply to you.
[40 CFR §63.6603(a)]

(1) As stated in §§ 63.6603 and 63.6640, you must comply with the following requirements for existing stationary RICE located at area sources of HAP emissions:

(i) Change oil and filter every 1,440 hours of operation or annually, whichever comes first;

(ii) Inspect spark plugs every 1,440 hours of operation or annually, whichever comes first, and replace as necessary; and

(iii) Inspect all hoses and belts every 1,440 hours of operation or annually, whichever comes first, and replace as necessary.

[Table 2d to Subpart ZZZZ of Part 63]

4.1.3. *[Reserved]*

4.1.4. The maximum wet natural gas throughput to the KW International Glycol Dehydration Unit shall not exceed 5.0 MMscf/day or 1,825 MMscf/year.

4.1.5. The Glycol Deydration Unit shall meet the following requirements:

a. The maximum emissions from the Glycol Dehydrator Regeneration Still Vent shall not exceed the limits given in the following table:

Table 4.1.5(a): Glycol Dehydrator Regeneration Still Vent Emission Limits(1)

Pollutant	PPH	TPY
VOC	2.54	11.12
Benzene	*0.08*	*0.34*
Ethylbenzene	*0.09*	*0.39*
n-Hexane	*0.04*	*0.16*
Toluene	*0.25*	*1.11*
Xylene	*0.48*	*2.09*
Total HAPs	0.94	4.10

(1) Emissions based on GLYCalc Version 4.0 (with a 20% safety factor) using wet gas throughputs as limited under 4.1.4.

b. The maximum aggregate emissions from the Glycol Dehydrator Flash Tank shall not exceed the limits given in the following table:

Table 4.1.5(b): Glycol Dehydrator Flash Tank Controlled Emission Limits(1)

Pollutant	PPH	TPY
VOC	4.00	17.50
Benzene	*0.01*	*0.03*
Ethylbenzene	*0.01*	*0.01*
n-Hexane	*0.09*	*0.38*
Toluene	*0.02*	*0.07*

Pollutant	PPH	TPY
Xylene	*0.01*	*0.06*
Total HAPs	0.13	0.55

(1) Emissions based on GLYCalc Version 4.0 (with a 20% safety factor) using wet gas throughputs as limited under 4.1.4.

c. As much of the GDU Flash Tank off-gases as possible, but not to go below a minimum of 50% of total gas produced in a day, shall be sent to the GDU Reboiler as fuel; and

d. **40 CFR 63, Subpart HH**
Exemptions. The owner or operator of an area source is exempt from the requirements of paragraph (d) of this section if the criteria listed in paragraph (e)(1)(i) or (ii) of this section are met, except that the records of the determination of these criteria must be maintained as required in § 63.774(d)(1).
[40 CFR §63.764(e)(1)]

(1) The actual average emissions of benzene from the glycol dehydration unit process vent to the atmosphere are less than 0.90 megagram per year, as determined by the procedures specified in § 63.772(b)(2) of this subpart.
[40 CFR §63.764(e)(1)(ii)]

4.1.6. The Glycol Deydrator Reboiler shall meet the following requirements:

a. The MDHI shall not exceed 0.20 mmBtu/hr and the unit shall only be primarily fired by dehydrator flash tank off-gases or, in cases where additional fuel is needed, by natural gas;

b. The maximum emissions from the Reboiler combustion exhaust shall not exceed the limits given in the following table:

Table 4.1.6(b): Reboiler Emission Limits

Pollutant	PPH(1)	TPY
CO	0.02	0.08
NO_x	0.02	0.10

(1) PPH emissions based on MDHI of Reboiler and emission factors from AP-42, Section 1.4.

c. As the annual emissions are based on 8,760 hours of operation, there is no annual limit on hours of operation or natural gas combusted on an annual basis;

d. The Reboiler shall be designed, operated, and maintained according to good engineering practices or manufacturing recommendations so as to achieve, at a minimum, a hydrocarbon combustion rate of 80.0%; and

e. No person shall cause, suffer, allow or permit emission of smoke and/or particulate matter into the open air from any fuel burning unit which is greater than ten (10) percent opacity based on a six minute block average.
[40CSR§2-3.1]

4.1.7. *[Reserved]*

4.1.8. The use of the catalytic converter shall be in accordance with the following requirements:

a. The automatic air/fuel ratio controller or closed-loop automatic feedback controller shall provide a warning or indication to the operator and/or be interlocked with the engine ignition system to cease engine operation in case of a masking, poisoning or overrich air/fuel ratio situation which results in performance degradation or failure of the catalyst element;

b. The engine ignition system shall be interlocked with a high temperature cutoff to cease engine operation before thermal deactivation of the catalyst occurs. The high temperature cutoff shall be set to an appropriate temperature based on the manufacturer's specifications for the effective operation of the catalyst.

c. No person shall knowingly:

(1) Remove or render inoperative any air pollution or auxiliary air pollution control device installed subject to the requirements of this permit;

(2) Install any part or component when the principal effect of the part or component is to bypass, defeat or render inoperative any air pollution control device or auxiliary air pollution control device installed subject to the requirements of this permit; or

(3) Cause or allow engine exhaust gases to bypass any catalytic reduction device; and

d. The permittee shall regularly inspect, properly maintain and/or replace catalytic reduction devices and auxiliary air pollution control devices to ensure functional and effective operation of the engine's physical and operational design. The permittee shall ensure proper operation, maintenance and performance of catalytic reduction devices and auxiliary air pollution control devices by:

(1) Maintaining proper operation of the automatic air/fuel ratio controller or automatic feedback controller;

(2) Following operating and maintenance recommendations of the catalyst element manufacturer.

4.1.9. *[Reserved]*

4.1.10. The maximum loadout of liquids from the storage tanks shall not exceed 106,000 gallons/year and shall be done in a manner so as to reasonably minimize escape of fugitive emissions.

4.1.11. The permittee shall not exceed the number and type of components (valves, pump seals, connectors, etc.) in gas/vapor or light liquid (as applicable) listed in Attachment N of Permit Application R13-3086.

4.1.12. The Company shall install, maintain, and operate all above-ground piping, valves, pumps, etc. that service lines in the transport of potential sources of regulated air pollutants to prevent any substantive fugitive escape of regulated air pollutants. Any above-ground piping, valves, pumps, etc. that shows signs of excess wear and that have a reasonable potential for substantive fugitive emissions of regulated air pollutants shall be repaired or replaced.

4.1.13. The permittee shall meet all applicable requirements, including those not specified above, as given under 45CSR2, 40 CFR 63, Subpart HH, and Subpart ZZZZ. Any final revisions made to 45CSR2, 40 CFR 63, Subpart HH, or Subpart ZZZZ will, where applicable, supercede those specifically cited in this section.

4.1.14. **Operation and Maintenance of Air Pollution Control Equipment.** The permittee shall, to the extent practicable, install, maintain, and operate all pollution control equipment listed in Section 1.0 and associated monitoring equipment in a manner consistent with safety and good air pollution control practices for minimizing emissions, or comply with any more stringent limits set forth in this permit or as set forth by any State rule, Federal regulation, or alternative control plan approved by the Secretary.
[45CSR§13-5.11.]

4.2. Monitoring, Compliance Demonstration, Recording and Reporting Requirements

4.2.1. For the purposes of demonstrating compliance with the maximum wet gas throughput limit set forth in 4.1.4., the permittee shall monitor and record the monthly and rolling twelve month amounts of the wet gas throughput of the Glycol Dehydration Unit.

4.2.2. In order to demonstrate compliance with 4.1.5(a) and (b), upon request of the Director, the permittee shall demonstrate compliance with the VOC/HAP emissions limits using GLYCalc Version 4.0 or higher.

To facilitate the above, the WV Division of Air Quality requires that the following parameters shall be measured at least once quarterly, with the exception of natural gas flowrate annual daily average, natural gas flowrate maximum design capacity, and wet gas composition, in order to define annual average values or, if monitoring is not practical, some parameters may be assigned default values as listed below:

- Natural Gas Flowrate;
- Operating hours per quarter;
- Quarterly throughput (mmscf/quarter);
- Annual daily average (mmscf/day);
- Maximum design capacity (mmscf/day);
- Absorber temperature and pressure;
- Lean glycol circulation rate;
- Glycol pump type and maximum design capacity (gpm);
- Flash tank temperature and pressure, if applicable;
- Stripping Gas flow rate, if applicable;
- Wet gas composition (upstream of the absorber - dehydration column) sampled in accordance with GPA method 2166 and analyzed consistent with GPA extended method 2286 as well as the procedures presented in the GRI-GLYCalc Technical Reference User Manual and Handbook V4.
- Wet gas water content (lbs H_2O/mmscf); and
- Dry gas water content (lbs H_2O/mmscf) at a point directly after exiting the dehydration column and before any additional separation points.

The following operating parameter(s) may be assigned default values when using GRI-GLYCalc:

- Dry Gas water content at a point directly after exiting the dehydration column and before any additional separation points or assume pipeline quality at 7 lb H_2O/mmscf.;

- Wet gas water content can be assumed to be saturated;
- Lean glycol water content if not directly measured may use the default value of 1.5% water as established by GRI; and
- Lean glycol circulation rate may be estimated using the recirculation ratio of 3 gal TEG/lb H_2O removed.

4.2.3. For the purposes of demonstrating compliance with visible emissions limitations set forth in 4.1.6(e), the permittee shall:

a. Conduct monthly Method 22 visible emission observations of the Reboiler exhaust to ensure proper operation for a minimum of one (1) minute each month the units are in operation;

b. In the event visible emissions are observed in excess of the limitations given under 4.1.6(e), the permittee shall take immediate corrective action;

c. Maintain records of the visible emission opacity tests conducted per Section 4.2.3.; and

d. Any deviation(s) from the allowable visible emission requirement for any emission source discovered during observations using 40CFR Part 60, Appendix A, Method 9 or 22 shall be reported in writing to the Director of the Division of Air Quality as soon as practicable, but in any case within ten (10) calendar days of the occurrence and shall include at least the following information: the results of the visible determination of opacity of emissions, the cause or suspected cause of the violation(s), and any corrective measures taken or planned.

4.2.4. For the purposes of demonstrating compliance with the Reboiler fueling requirements set forth in 4.1.5(c), the permittee shall, upon request by the Director, calculate the percentage of flash gas used as fuel in the Reboiler over the previous twelve months. The calculation shall be based on the estimated average heat content of the flash gas and the estimated hours of operation of the Reboiler.

4.2.5. For the purposes of demonstrating compliance with the truck loadout throughput limit set forth in 4.1.10(b), the permittee shall monitor and maintain monthly and rolling twelve month records of the amount of liquids loaded out.

4.2.6. **40 CFR 63, Subpart HH**
The permittee shall comply with all applicable monitoring, compliance demonstration and record-keeping requirements as given under 40 CFR 63, Subpart HH including the following:

Determination of glycol dehydration unit flowrate, benzene emissions, or BTEX emissions. The procedures of this paragraph shall be used by an owner or operator to determine glycol dehydration unit natural gas flowrate, benzene emissions, or BTEX emissions.
[40 CFR §63.772(b)]

a. The determination of actual average benzene or BTEX emissions from a glycol dehydration unit shall be made using the procedures of either paragraph (b)(2)(i) or (ii) of this section. Emissions shall be determined either uncontrolled, or with federally enforceable controls in place.
[40 CFR §63.772(b)(2)]

(1) The owner or operator shall determine actual average benzene or BTEX emissions using the model GRI-GLYCalcTM , Version 3.0 or higher, and the procedures presented in the associated GRI-GLYCalcTM Technical Reference Manual. Inputs to the model shall be representative of actual operating conditions of the glycol dehydration unit and may

be determined using the procedures documented in the Gas Research Institute (GRI) report entitled "Atmospheric Rich/Lean Method for Determining Glycol Dehydrator Emissions" (GRI-95/0368.1); or
[40 CFR §63.772(b)(2)(i)]

(2) The owner or operator shall determine an average mass rate of benzene or BTEX emissions in kilograms per hour through direct measurement using the methods in § 63.772(a)(1)(i) or (ii), or an alternative method according to § 63.7(f). Annual emissions in kilograms per year shall be determined by multiplying the mass rate by the number of hours the unit is operated per year. This result shall be converted to megagrams per year.
[40 CFR §63.772(b)(2)(ii)]

4.2.7. The permittee shall meet all applicable Monitoring, Compliance Demonstration and Source-Specific Recordkeeping and Reporting Requirements as given under 45CSR2, 40 CFR 63, Subpart HH, and Subpart ZZZZ. Any final revisions made to 45CSR2, 40 CFR 63, Subpart HH, or Subpart ZZZZ will, where applicable, supercede those specifically cited in this section.

4.3. Performance Testing Requirements

4.3.1. At such reasonable time(s) as the Secretary may designate, in accordance with the provisions of 3.3 of this permit, the permittee shall conduct or have conducted test(s) to determine compliance with the emission limitations established in this permit and/or applicable regulations.

4.3.2 The permittee shall meet all applicable Performance Testing Requirements as given under 45CSR2, 40 CFR 63, Subpart HH, and Subpart ZZZZ.

4.4. Additional Recordkeeping Requirements

4.4.1. **Record of Monitoring.** The permittee shall keep records of monitoring information that include the following:

a. The date, place as defined in this permit and time of sampling or measurements;

b. The date(s) analyses were performed;

c. The company or entity that performed the analyses;

d. The analytical techniques or methods used;

e. The results of the analyses; and

f. The operating conditions existing at the time of sampling or measurement.

4.4.2. **Record of Maintenance of Air Pollution Control Equipment.** For all pollution control equipment listed in Section 1.0, the permittee shall maintain accurate records of all required pollution control equipment inspection and/or preventative maintenance procedures.

4.4.3. **Record of Malfunctions of Air Pollution Control Equipment.** For all air pollution control equipment listed in Section 1.0, the permittee shall maintain records of the occurrence and duration of any malfunction or operational shutdown of the air pollution control equipment during which excess emissions occur. For each such case, the following information shall be recorded:

a. The equipment involved.

b. Steps taken to minimize emissions during the event.

c. The duration of the event.

d. The estimated increase in emissions during the event.

For each such case associated with an equipment malfunction, the additional information shall also be recorded:

e. The cause of the malfunction.

f. Steps taken to correct the malfunction.

g. Any changes or modifications to equipment or procedures that would help prevent future recurrences of the malfunction.

CERTIFICATION OF DATA ACCURACY

I, the undersigned, hereby certify that, based on information and belief formed after reasonable inquiry, all information contained in the attached _____, representing the period beginning _____ and ending _____, and any supporting documents appended hereto, is true, accurate, and complete.

Signature[1] _____ _____
(please use blue ink) Responsible Official or Authorized Representative Date

Name and Title _____ _____
(please print or type) Name Title

Telephone No. _____ Fax No. _____

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[1] This form shall be signed by a "Responsible Official." "Responsible Official" means one of the following:

a. For a corporation: The president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit and either:

   (I) the facilities employ more than 250 persons or have a gross annual sales or expenditures exceeding $25 million (in second quarter 1980 dollars), or

   (ii) the delegation of authority to such representative is approved in advance by the Director;

b. For a partnership or sole proprietorship: a general partner or the proprietor, respectively;

c. For a municipality, State, Federal, or other public entity: either a principal executive officer or ranking elected official. For the purposes of this part, a principal executive officer of a Federal agency includes the chief executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., a Regional Administrator of USEPA); or

d. The designated representative delegated with such authority and approved in advance by the Director.